CLAIMS

1. A rotation angle detection device characterized by comprising:

a yoke member which is formed of a magnetic material rotating in synchronization with a rotary shaft and fixed to a nonmagnetic member attached to the rotary shaft;

a magnet which is disposed with a predetermined space apart from the yoke member in the axial direction and has a magnetic pole facing the yoke member on the axial direction edge surface thereof; and

a magnetic detection element disposed in a magnetic path which is formed by the magnet and passes through the yoke member.

2. The rotation angle detection device according to claim 1, characterized in that

the magnet is attached to a fixing member formed of a magnetic material, and

the fixing member has a magnet attachment portion to which the magnet is fixed and a magnetic detection element attachment portion which is magnetically connected to the magnet attachment portion and to which the magnetic detection element is fixed with a predetermined space apart from the yoke member in the axial direction.

3. The rotation angle detection device according to claim 2, characterized in that the fixing member is disposed adjacent to the magnet in the axial direction.

4. The rotation angle detection device according to claim 1, characterized in that the magnet is axially magnetized.

5. The rotation angle detection device according to claim 1, characterized in that the nonmagnetic member is a throttle gear for driving a throttle valve which is provided in an electronically-controlled throttle valve of an engine.

6. A rotation angle detection device characterized by comprising:

a magnet which rotates in synchronization with a rotary shaft, which has a magnetic pole on the axial direction edge surface thereof, and which is magnetically connected to the rotary shaft;

a yoke member which is disposed with a predetermined space apart from the magnet in the axial direction and is formed of a magnetic material facing the magnetic pole of the magnet; and

a magnetic detection element disposed in a magnetic path which is formed by the magnet and passes through the yoke member.

7. The rotation angle detection device according to claim 6, characterized in that the magnet is axially magnetized.

8. The rotation angle detection device according to claim 6, characterized in that

the magnetic detection element is attached to a fixing member formed of a magnetic material, and

the yoke member is attached to the axial direction edge surface of the magnetic detection element.

9. The rotation angle detection device according to claim 1 or claim 6, characterized in that

the yoke member and magnet are formed into a partially cylindrical shape, and

the outer diameter of the yoke member is larger than the outer diameter of the magnet.

10. The rotation angle detection device according to claim 1 or 6, characterized in that opposed surfaces between the yoke member and magnet extend in the radial direction.

11. The rotation angle detection device according to claim 1 or 6, characterized in that

opposed areas between the yoke member and magnet change with a rotation of the rotary shaft, and

the change in the opposed areas changes the flux density in the magnetic path.

12. The rotation angle detection device according to claim 1 or 6, characterized in that the rotary shaft is a valve shaft to which a throttle valve in an electronically-controlled throttle valve of an engine is fixed.